

## ABSTRACT

A variable gain amplifier circuit is provided so that an electric current decreases when a voltage gain is lowered and that the amplifier circuit is substantially free of a deterioration in distortion characteristics.

The bases of bipolar transistors Q1, Q3 and Q5 and the bases of bipolar transistors Q2, Q4 and Q6 are connected in common with each other, these bipolar transistors forming a plurality of common-emitter amplifier circuits, and switches SW2, SW1 and SW0 are connected to the respective sides of the bipolar transistors. The emitter sides are held at a ground potential gnd by switching the switches SW2, SW1 and SW0 so that the voltage gain is controlled by selecting the common-emitter amplifier circuits different in voltage gain. A collector current  $I_0$  and an emitter degeneration resistance  $R_e$  between the common-emitter amplifier circuits are so arranged as to have different values. The ratio of the collector current  $I_0$  is set inversely proportional to the ratio of the emitter degeneration resistance  $R_e$ , whereby the collector current  $I_0$  decreases when the voltage gain is lowered and a deterioration in distortion characteristics is substantially obviated.

Attachment 1